

WHAT IS CLAIMED IS:

1. A vortex inhibitor for molten metal pouring from a discharge nozzle comprising:
a uniform castable refractory body having a generally tapering shape
5 along a longitudinal axis from a base toward a narrow end and a hollow chamber positioned longitudinally to the body extending within the body; and
an elongated sacrificial member constructed to dissolve before substantially obstructing the discharge nozzle and retained by the hollow chamber to form an integral body;
10 whereby the integral body combining the refractory body and the sacrificial member has a specific gravity of about 2.3 to about 7.0, and is self-orienting in a narrow end downward position when supported in molten metal.
2. The vortex inhibitor of claim 1 wherein protrusions extending
15 outwardly from the sacrificial member mount in the hollow chamber to form an integral body.
3. The vortex inhibitor of claim 1 wherein crimps extending
20 outwardly from the sacrificial member mount in the hollow chamber to form an integral body.
4. The vortex inhibitor of claim 1 wherein molten metal is disposed within the hollow chamber upon introduction into the metal receptacle.
5. The vortex inhibitor of claim 1 wherein the sacrificial member
25 is hollow.
6. The vortex inhibitor of claim 1 wherein the sacrificial member is a solid bar.

7. The vortex inhibitor of claim 1 wherein an exposed surface of the sacrificial member is coated with a refractory material having a refractory coating thickness.
- 5 8. The vortex inhibitor of claim 7 wherein the refractory coating thickness is less than about 9 millimeters.
9. The vortex inhibitor of claim 3 wherein the sacrificial member is filled with a refractory material.
- 10 10. The vortex inhibitor of claim 1 wherein the body includes a complex polygonal base.
11. The vortex inhibitor of claim 1 wherein the base is hexagonal.
12. The vortex inhibitor of claim 1 wherein the base is octagonal.
- 15 13. The vortex inhibitor of claim 1 wherein the specific gravity of the elongated sacrificial member is in the range of about 3.5 to 7.9.
14. A vortex inhibitor for molten metal pouring from a discharge nozzle comprising:
- 20 a uniform castable refractory body having a generally tapering shape along a longitudinal axis from a base toward a narrow end and a shaft positioned longitudinally to the body extending within the body; and
- an elongated sacrificial member constructed to dissolve before substantially obstructing the discharge nozzle and retained by the shaft to form an integral body;
- 25 whereby the integral body combining the refractory body and the sacrificial member has a specific gravity of about 2.3 to about 7.0, and is self-orienting in a narrow end downward position when supported in molten metal.
15. The vortex inhibitor of claim 14 wherein the shaft is hollow.

16. The vortex inhibitor of claim 14 wherein the shaft is solid.

17. The vortex inhibitor of claim 15 wherein the sacrificial member contains external screw threads.

5 18. The vortex inhibitor of claim 16 wherein the sacrificial member contains external screw threads.

19. The vortex inhibitor of claim 17 wherein an end of the shaft contains internal screw threads, wherein the external screw threads on the sacrificial member and internal screw threads are matable.

10 20. The vortex inhibitor of claim 15 wherein the sacrificial member contains internal screw threads and an end of the shaft contains internal screw threads.

21. The vortex inhibitor of claim 20 further comprising a nipple with external screw threads at each end, wherein the nipple mates the sacrificial member with the shaft.

15 22. The vortex inhibitor of claim 18 wherein an end of the shaft contains external screw threads.

20 23. The vortex inhibitor of claim 22 having a coupling containing internal screw threads, wherein the coupling mates the sacrificial member with the shaft, whereby the body and the sacrificial member combination form an integral vortex inhibitor.

24. The vortex inhibitor of claim 14 wherein the sacrificial member is hollow.

25. The vortex inhibitor of claim 24 wherein the sacrificial member is positioned snugly over the shaft.

26. The vortex inhibitor of claim 14 wherein the shaft extends partially within the body.

27. The vortex inhibitor of claim 14 wherein the specific gravity
5 of the elongated sacrificial member is in the range of about 3.5 to about 7.9.